TRANSMITTAL OF APPEAL BRIEF	Docket No. TBRX-P01-001

In re Application of: Peter W. J. Jones

Application No.	Filing Date	Examiner	Group Art Unit
09/919584	July 30, 2001	J. C. Wang	2672

Invention: METHOD OF CREATING A FULL COLOR DISPLAY

TO THE COMMISSIONER OF PATENTS:

Transmitted herewith is the Appeal Brief in this application, with respect to the Notice of Appeal filed: September 22, 2004 .

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Dated: March 21, 2005

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PATENT

Attorney Docket No. TBRX-P01-001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of:	)	
	)	
Jones, Peter W. J., and Purcell, Dennis W.	)	Art Unit: 2672
	)	
Serial No.: 09/919584	)	Examiner: Wang, Jin Cheng
	)	
Filing Date: July 30, 2001	)	
	)	
For: METHOD OF CREATING A FULL COLOR DISPLAY	)	

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March 21, 2005
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By: Joanne Ryan
(Joanne Ryan)

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BRIEF ON APPEAL

This is an appeal to the Board of Patent Appeals & Interferences from the decision of the Examiner finally rejecting claims 1 – 24, pursuant to the Notice of Appeal filed August 19, 2004. The appealed claims are as set forth in Appendix I. Provision for payment of the fee for filing the brief on appeal is submitted herewith. This brief is submitted in triplicate in accordance with the provisions of 37 C.F.R. § 1.192 (a).

REAL PARTY OF INTEREST

The real party of interest is Tenebraex Corporation, the assignee of the parties named in the caption of this brief.

RELATED APPEALS AND INTERFERENCES

Applicants are unaware of any related appeals or interferences that will directly affect, directly be affected by, or have a bearing on the Board's decision in this appeal.

STATUS OF CLAIMS

Claims 1-24 are pending and are on appeal. Claims 1-24 were finally rejected in the Office Action dated April 19, 2004. Claims 1, 12, and 13 are independent claims; all other pending claims depend upon one or more of the independent claims. No claims have been allowed.

STATUS OF AMENDMENTS

Claims 1 – 24 were finally rejected in the Office Action dated April 19, 2004. An Amendment After Final Rejection was filed on September 20, 2004. The Amendment proposed amending claim 6 to more specifically claim Applicants' invention, and claims 19 and 24 to correct typographical errors. An Advisory Action was mailed on November 2, 2004, in response to the Amendment. In the Advisory Action, the Examiner stated that the Amendment and Response would not be entered.

SUMMARY OF INVENTION

The claimed invention includes, but is not limited to, devices and techniques for creating a display in an electronic device which can give the perception to a viewer of a full range of colors by use of only two different color elements (a longer wavelength and a shorter

wavelength), rather than by the use of three (red, green, blue) as is done in current practice. See e.g., Publication p. 1, paragraph [0002]. Without limitation, certain aspects of the invention are directed to a structure comprising a matrix of two different elements (either light-emitting or light filtering), one element emitting or passing light with a shorter wavelength than the other element. See e.g., Publication p. 1, paragraph [0006]. Other aspects are directed to methods of creating a perception of a full color display from a matrix of optical elements of a first and second color. See e.g., Publication p. 1, paragraph [0007].

ISSUE

The issue to be decided in this appeal is whether the pending claims are unpatentable under 35 U.S.C. 103(a) over Young (US 5,682,180) in view of Havel (US 6,018,237).

GROUPING OF CLAIMS

Claims 1, 12, and 13 are the pending independent claims in this application. Claims 2-11 are dependent on claim 1 and claims 14-24 are dependent on claim 13. The claims do not stand or fall together.

ARGUMENT

Claims 1-24 are finally rejected under 35 U.S.C. 103(a) over Young (US 5,682,180) in view of Havel (US 6,018,237). The rejections are respectfully appealed. Applicants specifically address the independent claims, claims 1, 12, and 13, below.

In the final Office Action mailed April 19, 2004, all the claims, claims 1-24, were finally rejected over Young and Havel. With regard to independent claims 1, 12, and 13, the Examiner maintained that Young teaches a method that gives the perception of a display with a full range of color from a matrix of optical elements of a first or a second color, comprising providing a two-color display of optical elements of a first color and a second color and being arranged in an alternating pattern, and translating the relative brightness of the points created by the full color display into a corresponding brightness for the for the respective points on the two-color display.

The Examiner further maintained that Havel teaches determining for an image presented on a full color display, the relative brightness for points of the image produced by the full color display, the feature Young fails to teach.

The Examiner has asserted that it would have been obvious under Young, in view of Havel, to provide a two-color display of optical elements of a first color or a second color to give the perception of a display with a full range of color. But these references, even when combined, do not teach or suggest all the features of the Applicants' invention. Applicants' invention provides the perception of a display with a full range of color from a matrix of optical elements of a first or a second color. Neither Young nor Havel discloses or suggests providing a two-color display of optical elements of a first color and a second color and being arranged in an alternating pattern to give the perception of a display with a full range of color.

Instead, Young teaches the use of two opponent color vectors to account for the majority of all perceived colors and gives illustrative examples using an orange/cyan and black/white opponent color vectors. (Col. 3, lines 39-49). The use of the orange/cyan and black/white opponent color vectors as depicted in Figures 2 and 4 demonstrates that Young uses four colors, i.e., orange, cyan, black, and white, to simulate a full color image. Young teaches the use of two opponent color vectors using a total of four colors. Therefore, Applicants submit Young fails to teach or suggest:

1) providing a two-color display of optical elements of a first color and a second color and being arranged in an alternating pattern as required by independent claim 1,
2) providing a two-color display of optical elements of a first and a second color arranged in an alternating pattern as required by independent claim 12, or
3) a display having two-color elements as required by independent claim 13.

Moreover, as described in Two-Dimensional Signal and Image Processing, "[b]rightness refers to how bright the light is. Hue refers to the color, such as red, orange, or purple. Saturation . . . refers to how vivid or dull the color is." Jae S. Lim, Two-Dimensional Signal and Image Processing, p. 414 (1990). Young teaches polarizing and filtering light on the Y axis to be orange, on the Z axis to be cyan, and between the Y and Z axes "to be a combination of orange

and cyan, the proportion of each color depending upon the angle of polarization." (Col. 8, lines 44-46). Basically, Young teaches creating the hues orange, cyan, and a combination of the two from polarized light. However, Young is silent regarding the brightness of these hues. Young fails to teach or suggest varying, modifying, or using the brightness of the orange and cyan hues. Therefore, Applicants submit Young also fails to teach or suggest:

1) translating the relative brightness of the points created by the full color display into a corresponding brightness for the respective points on the two-color display as required by independent claim 1,
2) translating the relative brightness of each point created by the three color display into a corresponding brightness for the respective points on the two-color display as required by independent claim 12, or
3) a process for translating the relative brightness of the three color components to relative brightness levels for the two-color elements of the display as required by independent claim 13.

Furthermore, Applicants note that the Havel publication fails to bridge the gap between Young and Applicants' invention. Havel fails to teach a device or method that translates the relative brightness of the points created by a full color display into a corresponding brightness for the respective points on a two-color display. Havel merely teaches measuring an input parameter and generating in response thereto, a two or three color variable display. Havel lacks any description of any system or method that translates a measure of relative brightness into anything. Moreover, there is no suggestion in either Young or Havel as to how the device of Havel could be modified to translate a measure of relative brightness on a three color display to a color display having a reduced number of colors, yet this is the explicit subject matter of all pending claims.

Applicants further submit that dependent claims 4, 5, 6, and 7 patentably distinguish over Young and Havel as both references are silent as to and fail to teach:

1) flashing the two-color display includes alternating the display at the flashing period between the image presented in the first and the second color as required by claim 4;
2) varying the flashing period as required by claim 5;
3) adding the relative brightness of a third color of a point in a three color image to a relative brightness of the first color of a two-dimensional point of the first and the second color as required by claim 6; and
4) summing the brightness for a three color red element with half the brightness of the three color green emitter to determine the relative brightness for the two-color first color emitter, and summing the brightness for a three color blue element with half the brightness of the three color green emitter to determine the relative brightness for the two-color second color emitter as required by claim 7.

Similarly, dependent claims 2-3, 8-11, and 14-24 include further limitations on independent claims 1 and 13 that are neither taught nor suggested by Young or Havel, either individually or in combination.

On September 20, 2004, Applicants submitted an amendment to claim 6 to more specifically recite Applicants' invention. This amendment was not entered by the Examiner. Applicants request the amendment to claim 6 be entered. Applicants submit proposed amended claim 6 also patentably distinguishes over Young and Havel as both references are silent as to and fail to teach adding the relative brightness of a third color of a point in a three color image to a relative brightness of the first color of a two-dimensional point of the first and the second color as required.

Moreover, the references have been combined only through impermissible hindsight. None of the cited references teaches or suggests that the Havel display system is applicable to providing a two-color display of optical elements of a first color or a second color to give the perception of a display with a full range of color. Contrary to the Examiner's interpretation, the principal object of Havel is to provide a measuring instrument with a variable color digital display. (Col. 1, ll. 65-67). In addition, Havel teaches away from Applicants' invention by

emphasizing the "[c]ompletely new, unexpected and heretofore impossible, features" obtained by substituting a variable color digital display for a well known monochromatic digital display, e.g., "capable of illuminating a display in any color of the spectrum." (Col. 2, ll. 2-5 and ll. 14-16). Applicants accordingly submit that there is no motivation in the art to combine Young and Havel.

To establish a prima facie case of obviousness, the Examiner must establish that all of the claim limitations are taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 985 (CCPA 1974). Furthermore, the Examiner must provide some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine reference teaching. *In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988). The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 682 (Fed. Cir. 1990).

As none of the references cited by the Examiner disclose or suggest, either alone or in combination, all of the elements of the Applicants' invention, and as the cited references have been impermissibly combined, the references do not render Applicants' independent claims obvious under 35 U.S.C. §103. Applicants further submit that all dependent claims pending in the application are also non-obvious under 35 U.S.C. 103 in view of the above. *In re Fine*, 837 F.2d 1071, 1076 (Fed. Cir. 1988).

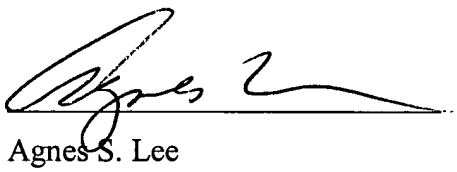
CONCLUSION

For the reasons given above, it is respectfully urged that the final rejection be reversed and that all pending claims be allowed.

Applicants authorize the Commissioner to withdraw the requisite fee for filing this appeal brief in the amount of $ 250.00 from **Deposit Account 18-1945** along with the five month extension fee. Applicants believe this response is being timely filed and no further fees are necessary. If there are any other fees not accounted for above, Applicants authorize the Commissioner to charge the fee to **Deposit Account 18-1945**.

If there are any questions after reviewing this paper, the Examiner is invited to contact the undersigned at (617) 951-7000.

Respectfully submitted,
ROPES & GRAY



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APPENDIX I

1. A method that gives the perception of a display with a full range of color from a matrix of optical elements of a first or a second color, comprising

providing a two-color display of optical elements of a first color and a second color and being arranged in an alternating pattern,

determining, for an image presented on a full color display, the relative brightness for points of the image produced by the full color display, and

translating the relative brightness of the points created by the full color display into a corresponding brightness for the respective points on the two-color display.

2. A method according to claim 1, wherein the step of translating includes mapping a three dimensional coordinate representative of the relative brightness of a point to a two dimensional point.

3. A method according to claim 1, including generating a flashing period representative of a timing pattern for flashing the two-color display.

4. A method according to claim 1, wherein flashing the two-color display includes alternating the display at the flashing period between the image presented in the first and the second color.

5. A method according to claim 4, including varying the flashing period.

6. A method according to claim 1, wherein the step of translating includes translating the relative brightnesses of a point in a red-green-blue image to a relative brightnesses of a two-dimensional point of the first and the second color.

7. A method according to claim 1, wherein the full color display includes red, green and blue emitters, and wherein the step of translating includes

summing the brightness for a three color red element with half the brightness of the three color green emitter to determine the relative brightness for the two-color first color emitter, and

summing the brightness for a three color blue element with half the brightness of the three color green emitter to determine the relative brightness for the two-color second color emitter.

8. A method according to claim 7, including generating a noise signal, and

summing the noise signal with the relative brightness for the two-color of the first and/or the second color emitter.

9. A method according to claim 1, including the further step of providing a video driver for driving a video display as a function of the translated relative brightness of points for a two-color display.

10. A method according to claim 1, wherein the optical elements comprise light emitting diodes.

11. A method according to claim 1, wherein the optical elements comprise filters.

12. A method for creating the perception of a display with a full range of colors from a matrix of optical elements of a first or a second color, comprising

providing a two-color display of optical elements of a first and a second color arranged in an alternating pattern,

determining for an image presented on a three color display, the relative brightness for each point of the image produced by the three color display,

translating the relative brightness of each point created by the three color display into a corresponding brightness for the respective points on the two-color display, and

sequentially activating optical elements of the first and the second color, for simulating the effect of a full color display.

13. An apparatus for visually displaying information on a two-color display, comprising

a display having two-color elements,

a memory device for storing information representative of a plurality of points for making up the image, each point being associated with information representative of three color components, and

a process for translating the relative brightness of the three color components to relative brightness levels for the two-color elements of the display.

14. An apparatus according to claim 13, further comprising a server system for executing the translation process and for delivering to the display having two color elements information representative of an image.

15. An apparatus according to claim 13, further including

a timer for periodically flashing the display.

16. An apparatus according to claim 13, further including

a noise generator for generating a noise signal having two-color components and for delivering the noise signal to the video driver process for processing the noise signal with the three color components of the image.

17. An apparatus according to claim 16 including a dynamically changing filter for introducing variation into the translation of the relative brightness of the three color components to relative brightness for the two-color elements.

18. An apparatus according to claim 13, wherein the process includes

a process for summing the brightness for a first one of the three color components with half the brightness of a second one of the three color components to determine the relative brightness for a first color component of the display, and

summing the brightness for a third color component with half the brightness of the second color component to determine the relative brightness for the second color component of the display.

19. An apparatus according to claim 13, wherein the process includes

a process for determining the long wavelength component of a two color display by multiplying the number s representative of relative brightness of three colors in a three color display by values representative of the effect of a longwave pass filter, and summing the generated numbers to provide the relative brightness of that point in the long wave component of the two color display, and

a process for determining the short wavelength component of a two color display by multiplying the number s representative of relative brightness of three colors in a three color display by values representative of the effect of a shortwave pass filter, and summing the generated numbers to provide the relative brightness of that point in the short wave component of the two color display.

20. An apparatus according to claim 13, further comprising a border having a color that is the combination of the first and the second colors or the two color display and being arranged substantially around the periphery of the display.

21. An apparatus to claim 20, wherein the border comprises part of the image displayed to the user.

22. An apparatus according to claim 20, wherein the border comprises colored border formed as an edge around the two-color display.

23. An apparatus according to claim 20, wherein the border comprises a yellow border of spectral yellow or yellow formed from red-green components.

24. An apparatus according to claim 13, wherein the two-color display include a display selected from the group consisting of an LED display, and LCD display, a light emitting polymer display and a CRT display.